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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,527	12/05/2003	Takuma Kobayashi	03500.017758.	7336

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EXAMINER

BUTLER, DENNIS

ART UNIT PAPER NUMBER

2115

DATE MAILED: 09/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/727,527

Applicant(s)

KOBAYASHI ET AL.

Examiner

Dennis M. Butler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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1. This action is in response to the amendment received on July 25, 2006. Claims 1-9 are pending.
2. The rejections under 35 U.S.C. 112, second paragraph, and 35 U.S.C. 101 have been withdrawn in view of applicant's amendments. The replacement Abstract has been approved by the examiner.
3. The text of those sections of Title 35, US Code not included in this action can be found in a prior Office Action.
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Mutoh et al., U. S. Patent 4,562,524.

Per claims 1-3, 6 and 8:

A) Mutoh et al teach the following claimed items:

1. a microcomputer having a timer (timer 15) with figure 1;
2. first and second semiconductor devices with latches 16 of figure 1 and at column 3, lines 16-47;
3. an interrupting step of interrupting the semiconductor device using the timer (timer 15) by generating a control signal (Tu) for controlling the timing of

turning on/off (PWM signal Eu) the semiconductor device (latch 16) with figures 1 and 2 and at column 2, line 62 – column 3, line 18;

4. the interrupting step performed in accordance with an interrupting signal (IRQ) that is input to the microcomputer at every occurrence of a predetermined period with IRQ, Es, Tu and Eu of figure 2, at column 3, line 64 – column 4, line 3, at column 4, lines 39-43 and at column 5, line 59 – column 6, line 5;

5. giving a set value to the timer (timer 15) and calculating a set value for a subsequent interrupting step with figure 2, at column 4, lines 39-58 and at column 5, line 51 – column 6, line 36. Therefore, at IRQ 2, pulse width T- is set into timer 15 and pulse width T+ is calculated.

Per claims 4, 7 and 9:

Mutoh describes that latch 16 generates a PWM signal for an inverter that generates a sine wave with figure 2, at column 1, lines 4-10 and at column 3, lines 26-33.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mutoh et al., U. S. Patent 4,562,524.

Per claim 5:

Mutoh et al teach the steps of the preceding claims as described in the above rejection. The claims differ from Mutoh in that Mutoh fails to explicitly teach that the power converter is a power conditioner for photovoltaic power generation as claimed. However, Mutoh describes that the invention is directed to a PWM inverter that servers as an alternating current power supply source at column 1,

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lines 4-10. photovoltaic power generation system were well known and available on the market at the time of the invention. In addition, it is well known in the art that photovoltaic power generation systems produce direct current and use inverters to convert the direct current to alternating current. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Mutoh's inverter for converting the direct current from a photovoltaic power generation system to alternating current.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis M. Butler whose telephone number is 571-272-3663. The examiner can normally be reached on Monday through Friday from 9:00 to

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5:30. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dennis M. Butler

Dennis M. Butler
Primary Examiner
Art Unit 2115